

Installation Checklist – HP ProLiant Cluster F500 for MA8000/EMA12000/EMA16000 Enhanced using Microsoft Windows Server 2003, Enterprise Edition

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ProLiant Cluster F500 for the StorageWorks MA8000/EMA12000/EMA16000 Enhanced



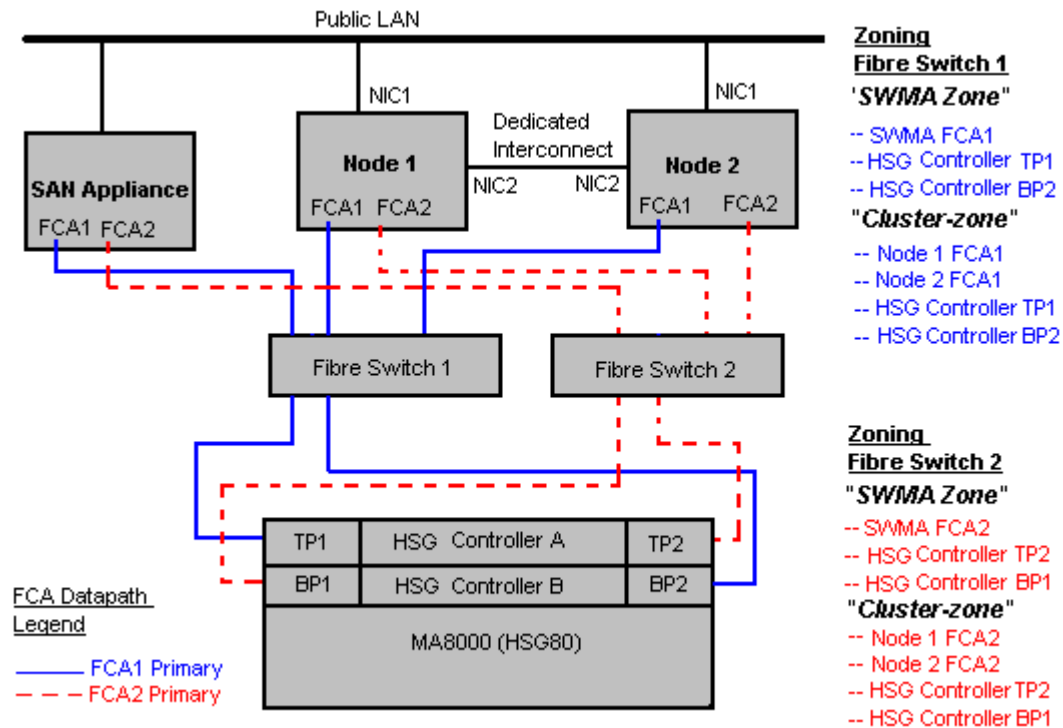
The HP ProLiant Cluster F500 for the StorageWorks MA8000/EMA12000/EMA16000 is a cluster solution made up of a ProLiant Cluster F500 for the Enterprise SAN Cluster Kit, high-end or high-density ProLiant servers, StorageWorks MA8000/EMA12000/EMA16000 storage systems, and a Microsoft Windows cluster capable operating system. The HP ProLiant Cluster F500 for MA8000/EMA12000/EMA16000 is a high-end cluster for mission critical data.

Key features of the ProLiant Cluster F500 for the MA8000/EMA12000/EMA16000 include:

- Scalable SANs designed to maximize cluster performance, uptime and storage capacity
- Multi-path software allows maximum availability with no single point of failure
- Disaster tolerant solutions to protect mission critical applications across geographies
- Unified suite of HP cluster management tools offer management capabilities to simplify the installation of complex clustered SAN configurations
- Supported in a shared fabric environment

Hardware Cabling Scheme

Figure 1. Hardware cabling and zoning scheme



Introduction

Microsoft Windows Server 2003, Enterprise Edition is an extension of the Microsoft Windows 2000 operating system environment developed to enhance the customer experience and to improve the overall usability and deployment.

General cluster improvements for Microsoft Windows Server 2003, Enterprise Edition include:

- **Enhanced cluster installation wizard** – built-in validation and verification function to help ensure base components are ready to be clustered.
- **Installation** – cluster binaries are automatically copied during the operating system installation.
- **Multi-node addition** – multiple nodes can be added in a single operation instead of one by one.
- **Active Directory integration** – tighter integration including a “virtual” computer object, Kerberos authentication, and a default location for services to publish service control points. Users can access the virtual server just like any other Windows server.

Note: The ProLiant F500 for MA8000/EMA12000/EMA16000 cluster solution using Microsoft Windows Server 2003, Enterprise Edition supports a maximum of 2 nodes.

This checklist provides step-by-step ProLiant Cluster F500 for MA8000/EMA12000/EMA16000 operating system installation and cluster configuration directions using Microsoft Windows Server 2003, Enterprise Edition.

Software and Hardware Requirements

The following table provides a checklist of the required software versions and, if applicable, any items to execute before beginning the installation. Place a checkmark (✓) in the box after completing each step.

✓	Software and Hardware Requirements
<input type="checkbox"/>	<p>Before installing your HP ProLiant F500 for MA8000/EMA12000/EMA16000 cluster solution, it is very important to refer to the HP Cluster Configuration Support website for details on components that make up a valid cluster configuration. There is a support matrix for each HP Cluster that details components that represent quality tested and supported HP Cluster configurations.</p> <p>Using the link below, select the appropriate operating system and storage platform and then refer to the row of deliverables that are relevant to the configuration you require.</p> <p>The HP Cluster Configuration Support website can be found at http://h18022.www1.hp.com/solutions/enterprise/highavailability/answercenter/configuration-all.html</p>
<input type="checkbox"/>	SmartStart CD.
<input type="checkbox"/>	Two supported ProLiant Servers, two supported Host Bus Adapters (HBAs) per server, two or more supported network adapters per server, two supported Fibre Channel switches, and one or more StorageWorks MA8000/EMA12000/EMA16000s per cluster. The storage will be referred to as the MA8000 for the remaining steps.
<input type="checkbox"/>	Review and understand any Read This First (RTF) and Getting Started cards that were shipped with the product.
<input type="checkbox"/>	Microsoft Windows Server 2003, Enterprise Edition software and documentation.
<input type="checkbox"/>	If applicable, Microsoft Windows Server 2003, Enterprise Edition Service Pack.
<input type="checkbox"/>	Insight Manager (optional).
<input type="checkbox"/>	One HP OpenView Storage Management Appliance.
<input type="checkbox"/>	HP StorageWorks HSG Element Manager software.
<input type="checkbox"/>	HP StorageWorks Solution Software for Windows for HBA driver.
<input type="checkbox"/>	HP StorageWorks MA8000 Array Controller Software (ACS) firmware.
<input type="checkbox"/>	HBA firmware and boot bios.
<input type="checkbox"/>	Fibre Channel switch firmware.
<input type="checkbox"/>	HP StorageWorks Secure Path for Windows (Included in the ProLiant Cluster F500 for the Enterprise SAN Cluster Kit).
<input type="checkbox"/>	Sufficient software rights to install the operating system and software applications on each node.
<input type="checkbox"/>	Ensure all hardware is installed and properly cabled as shown in figure 1 - hardware cabling and zoning scheme diagram on page 3.
<input type="checkbox"/>	Install the NICs for the private network (cluster heartbeat interconnect) and the public network in each cluster node.
<input type="checkbox"/>	Install the HBAs in each cluster node.
	Best Practice: If the server is equipped with multiple buses, it is recommended to install each HBA on a different bus.
<input type="checkbox"/>	Cable the private NIC in each cluster node. You may use the Ethernet crossover cable included in your cluster kit if desired.
<input type="checkbox"/>	Cable the HBAs to the switches in each cluster node.
	Note: The configuration steps detailed in this document are for a switched environment only.

-
- ☐ Cable the MA8000 storage subsystem(s) to the switches.
-
- ☐ Cable the LAN using an Ethernet cable from the public NIC in each cluster node to the public LAN switch.
-

Gathering Information

The following table provides a checklist for the required input parameters that will facilitate the operating system and cluster installation. Write the information in the values column next to each item. Place a checkmark (✓) in the box after completing each step.

✓	Item	Values	
<input type="checkbox"/>	Name for each node:	Node 1:	Node 2:
<input type="checkbox"/>	Public network connection IP address and subnet mask for each node:	Node 1	Node 2
		IP address: Subnet mask:	IP address: Subnet mask:
<input type="checkbox"/>	Private network connection (cluster heartbeat) IP address and subnet mask for each node:	Node 1	Node 2
		IP address: Subnet mask:	IP address: Subnet mask:
<input type="checkbox"/>	WWID, slot number, and bus of each HBA for each node:	Node 1	Node 2
		HBA 1 WWID:	HBA 1 WWID:
		HBA 1 slot and bus:	HBA 1 slot and bus:
		HBA 2 WWID:	HBA 2 WWID:
		HBA 2 slot and bus:	HBA 2 slot and bus:
<input type="checkbox"/>	Cluster name:		
<input type="checkbox"/>	Cluster IP address and subnet mask:	IP address: Subnet mask:	
<input type="checkbox"/>	Default gateway address:	IP address:	
<input type="checkbox"/>	WINS server address:	IP address:	
<input type="checkbox"/>	DNS address:	IP address:	
<input type="checkbox"/>	Local machine Administrator password (used during OS installation):	Know the Administrator password	
<input type="checkbox"/>	Domain name:		
<input type="checkbox"/>	Domain administrator user name and password (used during OS installation to have the machine join the domain):	Know the user name and password	
<input type="checkbox"/>	Domain account name and password for cluster service (this account has special privileges on each cluster node):	Know the user name and password	

Configuring Storage - Initial Steps

The following table provides a checklist of the steps for the initial steps of the storage configuration. Place a checkmark (✓) in the box after completing each step.

✓	Configuring Storage – Initial Steps
<input type="checkbox"/>	Connect the MA8000 to the Fibre Channel switches. Refer to figure 1 - hardware cabling and zoning scheme diagram on page 3. For more information regarding the F500, please visit http://h18000.www1.hp.com/solutions/enterprise/highavailability/microsoft/haf500/index-ma8000.html
<input type="checkbox"/>	Power on the MA8000 subsystem.
<input type="checkbox"/>	Connect the serial cable that was provided with the HSG80 controller to a monitor node or server, which will be used to initially configure the MA8000. Refer to the HSG80 documentation regarding establishing a hyperterminal connection to the storage subsystem.
<input type="checkbox"/>	Before the HSG80 controllers can be configured, the node ID and check sum must be set. This information can be found on the controller enclosure. Example: set this node_id=5000-1fe1-0007-1350 7k
<input type="checkbox"/>	The controller must then be rebooted. Example: restart this
<input type="checkbox"/>	Because the controllers will be in an Active/Active configuration, the controllers need to be placed in a multibus failover configuration. Example: set multibus_failover copy = this
<input type="checkbox"/>	Set the correct date and time on the controllers. Example: set this time=dd-mmm-yyyy:hh:mm:ss Example: set this time=18-feb-2003:18:50:00
<input type="checkbox"/>	If you are using cache batteries instead of a global UPS, then you will need to run the frutil utility on each controller to set the correct battery expiration date. Example: run frutil (Select yes to replace battery, and then press enter when prompted). You will have to manually move the serial cable to the other controller.
<input type="checkbox"/>	Configure the controllers to use mirrored cache. Example: set this mirrored_cache
<input type="checkbox"/>	In order to setup logical drives, the storage subsystem needs to identify how many disks are present by running the config utility. Example: run Config
<input type="checkbox"/>	All fibre ports on the HSG80 controllers need to be turned on for the HP OpenView Storage Management Appliance to see the storage subsystem. Note: This example assumes the HSG80 is attached to fabric switches. Example: set this port_1_topology=fabric set this port_2_topology=fabric set other port_1_topology=fabric set other port_2_topology=fabric

Configuring the HP OpenView Storage Management Appliance

The following table provides a checklist of the configuration steps for the HP OpenView Storage Management Appliance. Place a checkmark (✓) in the box after completing each step.

✓	Configuring the HP OpenView Storage Management Appliance
<input type="checkbox"/>	Power on the HP OpenView Storage Management Appliance.
<input type="checkbox"/>	Refer to the HP OpenView Storage Management Appliance documentation for detailed installation and configuration instructions. http://h18000.www1.hp.com/products/sanworks/managementappliance/documentation.html
<input type="checkbox"/>	Log into the Storage Management Appliance from any network browser. Note: The default username and password is administrator .
<input type="checkbox"/>	Install the HP StorageWorks HSG Element Manager Software if needed: Insert the HP StorageWorks HSG Element Manager CD → Select Application → Installation Services → Install Products → select CDROM → Next Step and follow the on-screen instructions to continue.
<input type="checkbox"/>	Cable the Storage Management Appliance to the SAN. Refer to figure 1 - hardware cabling and zoning scheme diagram on page 3 for more details.
<input type="checkbox"/>	Connect the Storage Management Appliance to the ethernet network. Note: You must have a working network to configure the storage subsystem via the Storage Management Appliance.
<input type="checkbox"/>	Configure the zone for the Storage Management Appliance. Using telnet or the Fibre Channel switch graphical user interface (GUI), create a Fibre Channel zone that consists of the WWIDs of the HBAs in the Storage Management Appliance and the WWIDs of the HSG80 controller ports. For more information regarding zoning, please refer to the Zoning User's Guide located at http://h18004.www1.hp.com/solutions/enterprise/highavailability/whitepapers/ms-ma8000.html
<input type="checkbox"/>	Reboot the Storage Management Appliance. After creating the zone for the Storage Management Appliance, the appliance may take a long time to identify the new connections of the HSG80. To speed up the configuration process, you can reboot the Storage Management Appliance to force the discovery of the HSG80 connections and ports.

Installing Node 1 Operating System

The following table provides a checklist of the operating system installation steps for Node 1. Place a checkmark (✓) in the box after completing each step.

✓	Installing Node 1 Operating System
<input type="checkbox"/>	Power on Node 1.
<input type="checkbox"/>	After the Array Controller initializes, press the F8 key to enter the Option ROM Configuration for Arrays (ORCA).
<input type="checkbox"/>	Create a primary boot partition on the server.
<input type="checkbox"/>	Exit the ORCA utility.
<input type="checkbox"/>	Boot the server with the SmartStart CD in the CD-ROM drive. Note: The instructions below are for SmartStart 6.x or later. Please refer to SmartStart 5.50 documentation for pre-Generation 2 servers.
<input type="checkbox"/>	Select the desired language from the Select Language screen.

-
- ☐ Follow the SmartStart on-screen instructions. Insert the operating system CD when prompted to complete the installation process.
-
- ☐ Each cluster node requires at least two network adapters—one connected to a public network, and one connected to a private network.
For the public network connection: If the network adapter can transmit at multiple speeds, then manually specify a speed and duplex mode. The speed for the network adapter should be hard coded (manually set) to be the same on all nodes according to the card manufacturer's specification.
Best Practice: To provide a maximum level of redundancy, use NIC Teaming capabilities for selected HP network products to provide a redundant public network connection. Please note, however, that NIC Teaming is not supported for the private network connection.
-
- ☐ Configure the TCP/IP settings for the public network connection.
-
- ☐ *For the private network connection:* To eliminate possible private network cluster communication issues refer to Microsoft Knowledge Base (KB) article **258750** to properly setup the private network.
<http://support.microsoft.com/default.aspx?scid=kb;en-us;258750>
-
- ☐ Configure the TCP/IP settings for the private network connection.
-
- ☐ Join the Microsoft Windows Domain and reboot when prompted.
-
- ☐ After the reboot, log the machine into the domain.
-
- ☐ Install the HBA device drivers.
Insert the StorageWorks Solution Software for Windows NT/2000/2003 Kit CD into the server CD-ROM drive. If autorun is enabled, the installation program starts. Otherwise, navigate to the root of the CD and double-click install.bat. Click **Solution Software for Windows**. Click **Perform Multi Driver Update** to start the driver update utility.
Note: When the driver update utility installation finishes, **DO NOT** reboot. After the HBA driver update completes, the StorageWorks Solution Software for Windows NT/2000/2003 Kit will automatically present you with the ability to install the Fibre Channel software.
-
- ☐ Install the Fibre Channel software.
Select **Fibre Channel Software Setup** to start the Fibre Channel setup wizard. If more than 5 Windows servers will have exclusive access to the same HSG80, the **Extended Configuration** option should be selected.
-
- ☐ Reboot after the installation of the Fibre Channel software.
-
- ☐ Install HP StorageWorks Secure Path for Windows software.
Insert the HP StorageWorks Secure Path for Windows CD into the server CD-ROM drive. Select **Install secure path** and follow the on-screen instructions.
Note: Verify that reverse lookup is configured correctly on the Domain Name System (DNS) server if you are using Fully Qualified Domain Names (FQDN).
-
- ☐ Reboot Node 1.
-
- ☐ Configure the cluster zone for Node 1.
Using telnet or the Fibre Channel switch graphical user interfaces (GUI), configure the cluster zone. The cluster zone will consist of the WWIDs of the HBA in Node 1 and the WWIDs of the HSG controller ports. For more information regarding zoning, please refer to the Zoning User's Guide located at
<http://h18004.www1.hp.com/solutions/enterprise/highavailability/whitepapers/ms-ma8000.html>
Note: After installing the HBA driver and Fibre Channel Software, the HBA will register its WWID with the fabric switch. There should be a minimum of two zones created per fabric. One of the zones consists of the Storage Management Appliance and the HSG controller ports, and the other zone consists of the cluster nodes and the HSG controller ports.
-
- ☐ When the installation is complete, shutdown Node 1.
-

Installing Node 2 Operating System

The following table provides a checklist of the operating system installation steps for Node 2. Place a checkmark (✓) in the box after completing each step.

Note: The ProLiant F500 for MA8000/EMA12000/EMA16000 cluster solution using Microsoft Windows Server 2003, Enterprise Edition supports a maximum of 2 nodes.

✓	Installing Node 2 Operating System
<input type="checkbox"/>	Power on Node 2.
<input type="checkbox"/>	After the Array Controller initializes, press the F8 key to enter the Option ROM Configuration for Arrays (ORCA).
<input type="checkbox"/>	Create a primary boot partition on the server.
<input type="checkbox"/>	Exit the ORCA utility.
<input type="checkbox"/>	Boot the server with the SmartStart CD in the CD-ROM drive. Note: The instructions below are for SmartStart 6.x or later. Please refer to SmartStart 5.50 documentation for pre-Generation 2 servers.
<input type="checkbox"/>	Select the desired language from the Select Language screen.
<input type="checkbox"/>	Follow the SmartStart on-screen instructions. Insert the operating system CD when prompted to complete the installation process.
<input type="checkbox"/>	Each cluster node requires at least two network adapters—one connected to a public network, and one connected to a private network. <i>For the public network connection:</i> If the network adapter can transmit at multiple speeds, then manually specify a speed and duplex mode. The speed for the network adapter should be hard set (manually set) to be the same on all nodes according to the card manufacturer's specification. Best Practice: To provide a maximum level of redundancy, use NIC Teaming capabilities for selected HP network products to provide a redundant public network connection. Please note, however, that NIC Teaming is not supported for the private network connection.
<input type="checkbox"/>	Configure the TCP/IP settings for the public network connection.
<input type="checkbox"/>	<i>For the private network connection:</i> To eliminate possible private network cluster communication issues, refer to Microsoft Knowledge Base (KB) article 258750 to properly setup the private network. http://support.microsoft.com/default.aspx?scid=kb;en-us;258750
<input type="checkbox"/>	Configure the TCP/IP settings for the private network connection.
<input type="checkbox"/>	Join the Microsoft Windows Domain and reboot when prompted.
<input type="checkbox"/>	After the reboot, log the machine into the domain.
<input type="checkbox"/>	Install the HBA device drivers. Insert the StorageWorks Solution Software for Windows NT/2000/2003 Kit CD into the server CD-ROM drive. If autorun is enabled, the installation program starts. Otherwise, navigate to the root of the CD and double-click install.bat. Click Solution Software for Windows . Click Perform Multi Driver Update to start the driver update utility. Note: When the driver update utility installation finishes, DO NOT reboot. After the HBA driver update completes, the StorageWorks Solution Software for Windows NT/2000/2003 Kit will automatically present you with the ability to install the Fibre Channel software.
<input type="checkbox"/>	Install the Fibre Channel software. Select Fibre Channel Software Setup to start the Fibre Channel setup wizard. If more than 5 Windows servers will have exclusive access to the same HSG80 the Extended Configuration option should be selected.
<input type="checkbox"/>	Reboot after the installation of the Fibre Channel software.

- ☐ Install HP StorageWorks Secure Path for Windows software.
Insert the HP StorageWorks Secure Path for Windows CD into the server CD-ROM drive. Select **Install secure path** and follow the on-screen instructions.
Note: Verify that reverse lookup is configured correctly on the Domain Name System (DNS) server if you are using Fully Qualified Domain Names (FQDN).
- ☐ Reboot Node 2.
- ☐ Configure the cluster zone for Node 2.
Using telnet or the Fibre Channel switch graphical user interfaces (GUI) configure the cluster zone. The cluster zone will consist of the WWID of the HBAs in Node 2 and the WWIDs of the HSG controller ports. For more detail information regarding zoning please refer to the Zoning User's Guide located at <http://h18004.www1.hp.com/solutions/enterprise/highavailability/whitepapers/ms-ma8000.html>
Note: After installing the HBA driver and Fibre Channel software, the HBA will register its WWID with the fabric switch. There should be a minimum of two zones created per fabric. One of the zones will consist of the StorageWorks SAN Management Appliance and the HSG controller ports, and the other zone will consist of the cluster nodes and the HSG controller ports.
- ☐ When the installation is complete, shutdown Node 2.

Configuring the Shared Storage

The following table provides a checklist of the steps necessary to configure the MA8000 shared storage. Place a checkmark (✓) in the box after completing each step.

✓	Configuring the Shared Storage
<input type="checkbox"/>	Power on both nodes. Log into the network domain.
<input type="checkbox"/>	Verify the HBAs have the most current supported firmware. Verify the HBAs firmware by accessing the lputilnt utility. However, do not make any driver parameter changes using this utility. Select Start → run → \winnt\system32\lputilnt
<input type="checkbox"/>	Log into the Storage Management Appliance.
<input type="checkbox"/>	Launch the HP StorageWorks HSG Element Manager. Select Devices → HSG Element Manager
<input type="checkbox"/>	Discover the storage system. If this is the first time the Storage Management Appliance sees the HSG80 controllers, the appliance needs to be granted access to the controllers. Select Options and then select Enable on the pair of controllers that the appliance will manage. The storage subsystem may take a few minutes to be fully discovered by the Storage Management Appliance
<input type="checkbox"/>	Identify the connections. After the Storage Management Appliance has fully discovered the storage subsystem, select the controller by expanding the tree view then select hosts . There should be a minimum of 12 connections present if the two zones were configured correctly on the fabric switches. There should be a total of 8 connections created by the two cluster nodes and 4 connections created by the Storage Management Appliance. If the Storage Management Appliance does not see the correct number of connections, you may have to reboot your nodes or Storage Management Appliance again. Note: It is a good idea to rename the connections to something more meaningful for ease of troubleshooting. Refer to the MA8000 reference documentation for instructions on renaming your connections. http://h18006.www1.hp.com/products/storageworks/ma8kema12k/index.html

- ☐ Create and Present the Virtual Disks.
Select **Virtual Disks**. Click **Create Virtual Disks**. Select the type of redundancy requirements for the new virtual disk. Select from the list of available physical disks. If a preferred controller is required, you can specify a preferred path **This Controller** or **Other Controller**.
Present the Virtual Disks to all nodes of the cluster.
Select the connections that belong to the cluster nodes. There should be 8 connections for a two-node cluster.
Repeat steps for creating the remaining virtual disks that are required.

Note: When presenting your virtual disks to the cluster nodes, do not select the connections that belong to the Storage Management Appliance.
- ☐ Configure the Virtual Disks on Node 1.
Power down Node 2. From the desktop of Node 1, select **Start → Programs → Administrative Tools → Computer Management**. Then select **Disk Management** to create volumes out of the logical drives.

Note: It is recommended that you configure the virtual disks on one node only. Do not upgrade the logical drives from Basic to Dynamic. Microsoft Cluster Services does not support dynamic disks.
- ☐ Be sure to assign drive letters and format the volumes as NTFS partitions. It is a good practice to provide a volume label to help identify the drives when the second node is powered on to discover the drives. This method makes it easier to scan the drives and ensure the correct drive letter is present.
- ☐ Close **Disk Management**.

Creating the Cluster

The following table provides a checklist for creating the cluster from Node 1. Place a checkmark (✓) in the box after completing each step.

✓	Creating the Cluster
<input type="checkbox"/>	Power down Node 2 to ensure that only one node is accessing the shared storage.
<input type="checkbox"/>	From the desktop of Node 1: Select Start → Programs → Administrative Tools → Cluster Administrator .
<input type="checkbox"/>	Select Create New Cluster from the <i>Action</i> drop-down box. Click OK .
<input type="checkbox"/>	Click Next on the welcome screen.
<input type="checkbox"/>	Select the domain the cluster is to be created in and enter a name for the cluster. Click Next .
<input type="checkbox"/>	Enter the name of the first server to form the cluster. Click Next .
<input type="checkbox"/>	When the cluster configuration wizard finishes analyzing the configuration, click Next .
<input type="checkbox"/>	Enter the IP address for the cluster. Click Next .
<input type="checkbox"/>	Enter the username and password for the cluster. Click Next .
<input type="checkbox"/>	Verify the proposed cluster configuration. Click Next .
<input type="checkbox"/>	When the cluster configuration wizard has finished creating the cluster, click Next and then click Finish .
<input type="checkbox"/>	Select Start → Settings → Control Panel → HP Management Agents . In the list of Inactive Agents , select Clustering Information and click Add to move this agent to the list of active agents and click Ok .
<input type="checkbox"/>	Restart the agents when prompted.

Joining Node 2 to the Cluster

The following table provides a checklist for the process of joining Node 2 to the cluster. Place a checkmark (✓) in the box after completing each step.

Note: The ProLiant F500 for MA8000/EMA12000/EMA16000 cluster solution using Microsoft Windows Server 2003, Enterprise Edition supports a maximum of 2 nodes.

✓	Joining Node 2 to the Cluster
<input type="checkbox"/>	Power on Node 2.
<input type="checkbox"/>	From the desktop of Node 2, select Start → Programs → Administrative Tools → Cluster Administrator .
<input type="checkbox"/>	Select Add nodes to cluster from the Action drop-down box. Enter the name of the cluster to join, click OK .
<input type="checkbox"/>	Click Next on the welcome screen.
<input type="checkbox"/>	Enter the name of the server that you want to join the cluster, click Add , and click Next .
<input type="checkbox"/>	When the cluster configuration wizard finishes analyzing the configuration, click Next .
<input type="checkbox"/>	Enter the user name and password for the cluster. Click Next .
<input type="checkbox"/>	Verify the proposed cluster configuration. Click Next .
<input type="checkbox"/>	When the cluster configuration wizard has finished adding the node to the cluster, click Next and then click Finish .
<input type="checkbox"/>	Select Start → Setting → Control Panel → HP Management Agents . In the list of Inactive Agents , select Clustering Information and click Add to move this agent to the list of active agents and click Ok .
<input type="checkbox"/>	Restart the agents when prompted.

Validating the Cluster Configuration

To validate the cluster installation, perform the following steps from either cluster node. Place a checkmark (✓) in the box after completing each step.

✓	Validating the Cluster Configuration
<input type="checkbox"/>	From the desktop of either node: Select Start → Programs → Administrative Tools → Cluster Administrator , and connect to the cluster.
<input type="checkbox"/>	Right click on one of the cluster groups and select Move Group .
<input type="checkbox"/>	Verify the group fails over and all resources come online.
<input type="checkbox"/>	Right click on the same cluster group and select Move Group .
<input type="checkbox"/>	Verify that the group fails back to the original node and all resources come online.
<input type="checkbox"/>	Repeat the validating the cluster configuration steps, for each group.

The installation is now complete.

For more Information

To learn more about HP High Availability and ProLiant Clusters visit the following Web site:

<http://www.hp.com/servers/proliant/highavailability>.

Feedback

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